

WHAT IS CLAIMED IS:

1. An ink tank cartridge for use in an ink jet recording apparatus, comprising:

a tank body having exterior walls;

a porous member stored in said tank body;

an ink supply port configured to receive an ink supply needle of an ink jet recording head, the supply port having an inner surface, defined by and extending through one of said exterior walls of said body to supply ink to the exterior of the cartridge; and

a packing member disposed within said ink supply port, said packing member having an opening therethrough, a lower surface and, an upper surface, with a rib formed on the upper surface.

2. The ink tank cartridge of claim 1, comprising an adhesive layer attaching said packing member to said ink port surface.

3. The ink tank cartridge of claim 2, wherein said adhesive layer is ink-resistant.

4. The ink tank cartridge of claim 1, comprising a pressing member having a window, the pressing member pressing against said lower surface of said packing member and biasing said packing member against said inner surface of said ink supply port.

5. The ink tank cartridge of claim 4, wherein said rib is maintained in an elastically deformed condition as a result of the pressing from the pressing member said rib.

6. The ink tank cartridge of claim 4, wherein said window is a thin film.

7. ~~The ink tank cartridge of claim 4, wherein said pressing member is thermally welded to said body.~~

8. The ink tank cartridge of claim 1, wherein the inner surface of the ink supply port has been treated to increase the hydrophilic properties thereof.

9. An ink tank cartridge for use in an ink jet recording apparatus, comprising:

a tank body having a plurality of exterior walls defining an interior space;

at least one porous member within said interior space of the tank body;

at least one port extending through one of said exterior walls of said body;

a gas-permeable seal for sealing said port; and

a gas-impermeable seal for sealing the ink tank cartridge and defining a decompressed dead space into which gas dissolved in said tank body can flow via said ink supply port and said gas-permeable seal when said ink tank cartridge is sealed.

10. The ink tank cartridge of claim 9, wherein at least one of said plurality of exterior walls has an outer surface defining a channel, at least in part defining said decompressed dead space.

11. The ink tank cartridge of claim 9, wherein said port is configured and coupled to the interior of the tank body to serve as an ink port for supplying ink to the exterior of the cartridge or injecting ink into the interior of the cartridge.

12. ~~The ink tank cartridge of claim 9, wherein said port is configured and~~

~~coupled to the interior of the tank body to serve as an exhaustion port for exhausting gas from the interior of the cartridge.~~

13. The ink tank cartridge of claim 9, wherein said gas-permeable seal comprises a low-density polyethylene film.

14. An ink tank cartridge for use in an ink jet recording apparatus, comprising:

a body having exterior walls and defining an interior portion;  
an ink supply port, extending through one of said exterior walls of said body to supply ink to the exterior of the cartridge, said ink supply port including a bore defined by an inner surface, and wherein at least a portion of said inner surface has a hydrophilic property.

15. The ink tank cartridge of claim 14, wherein said at least a portion of ~~said inner surface had been made hydrophilic by ultraviolet irradiation.~~

Sub 2 16. A method of manufacturing an ink cartridge having an ink supply port, having an inlet formed in the container body, for use in an ink jet recorder, comprising the step of treating at least a portion of the ink supply port inlet with ultraviolet radiation to improve the wettability of the treated portion.

Sub B2 17. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of at least approximately 10 C° above the ambient temperature of the ink.

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18. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of between approximately 10 C° and 20 C° above the ambient temperature of the ink.

19. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of between more than 20 C° above the ambient temperature of the ink.

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20. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of

providing a container body having a first wall and a plurality of walls extending upwardly therefrom to define an opening spaced from the bottom wall on a pallet, the container body including a chamber for accommodating a porous member therein, and an ink supply port, having an inlet formed in the bottom surface of the chamber and an outlet;

inserting a packing member into the ink supply port and then sealing the ink supply port outlet;

inserting a porous member into the foam chamber;

bonding a cover to the opening of the container body;

depressurizing the ink cartridge a first time;

injecting ink into the foam chamber after the first depressurizing step;

depressurizing the ink cartridge a second time; and

sealing the remainder of the cover after the second depressurizing step.

Sub B3 / 21. The method of claim 20, wherein, prior to inserting the packing member, the container is positioned on a pallet such that the first wall faces upward away from the top of the pallet, and after inserting the packing member, resetting the container body on the pallet by turning the container body upside down such that the opening faces upward and the first wall faces the pallet.

22. The method of claim 20, comprising the step of affixing a filter to the ink supply port inlet.

23. The method of claim 20, wherein the ink cartridge is depressurized to approximately 200 mm Hg below atmospheric pressure during the second depressurization step.

24. The method of claim 20, comprising the steps of inserting the container body into a bag having an opening and sealing the bag opening in a vacuum environment.

Sub C4 / 25. A method of manufacturing an ink cartridge for use in an ink jet

recorder, comprising the step of

providing a container body having a first wall and a plurality of walls extending upwardly therefrom to define an opening spaced from the bottom wall on a pallet, the container body including a foam chamber for accommodating a porous member therein, and an ink supply port, having an inlet formed in the bottom surface of the foam chamber and an outlet;

inserting packing into the ink supply port and then sealing the ink supply port outlet;

inserting a porous member into the foam chamber;

bonding a cover to the opening of the container body;

depressurizing the ink cartridge a first time;

injecting ink into the foam chamber;

depressurizing the ink cartridge a second time;

sealing the cover after the second depressurizing step;

inserting the sealed container body into a bag having an opening; and

sealing the opening of the bag in a vacuum environment.

26. The method of claim 25, wherein the bag opening is sealed in a vacuum environment within approximately 72 hours after the second depressurization step.

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27. The method of claim 25, wherein, prior to inserting the packing

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